No. 688,413. Patented Dec. 10, 1901.

S. HARBISON.

SPRING FOR BEDS OR THE LIKE.

(Application filed Jan. 5, 1901.)

(No Model.)

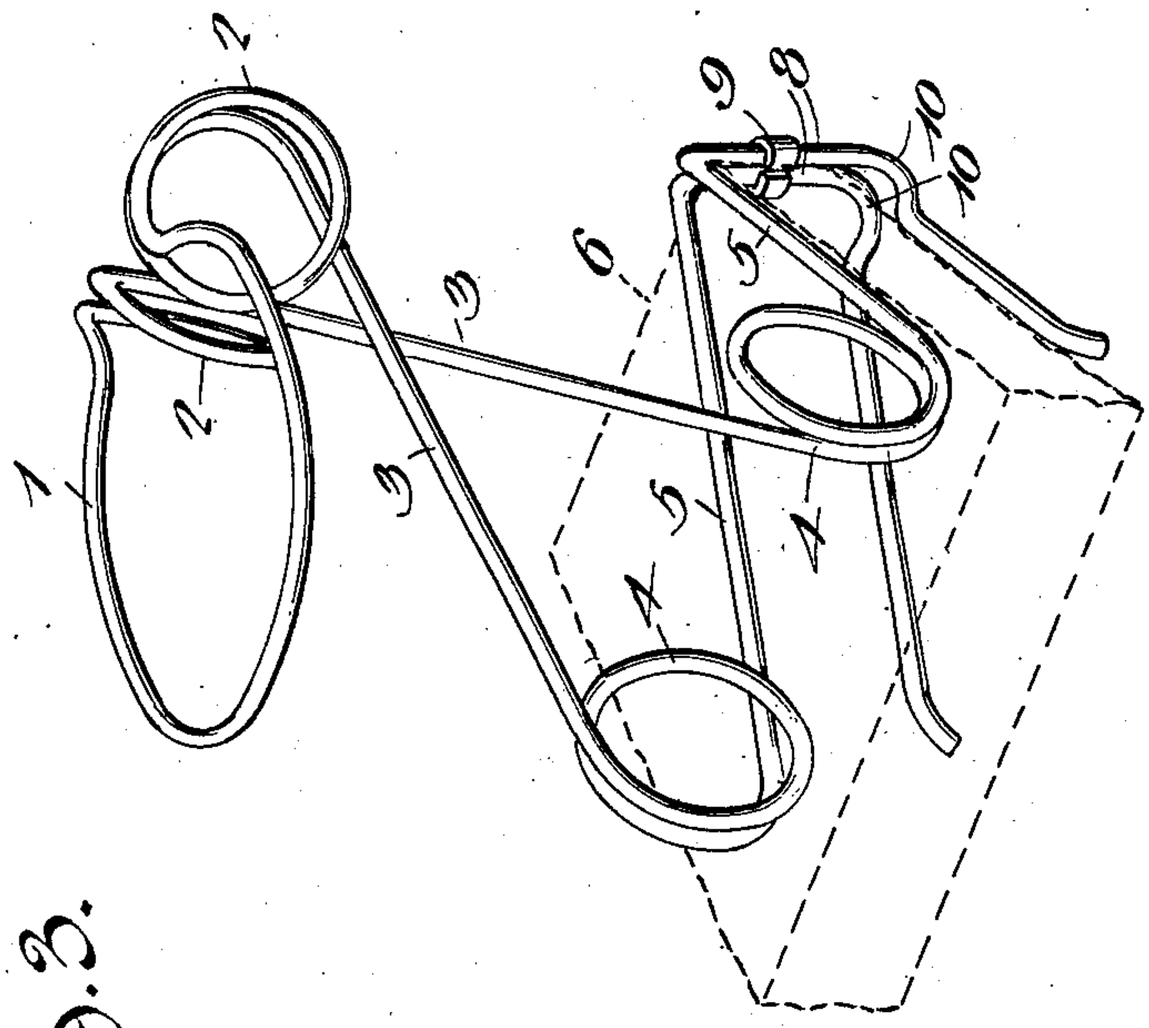

Fig. 2.

Fig. 3.

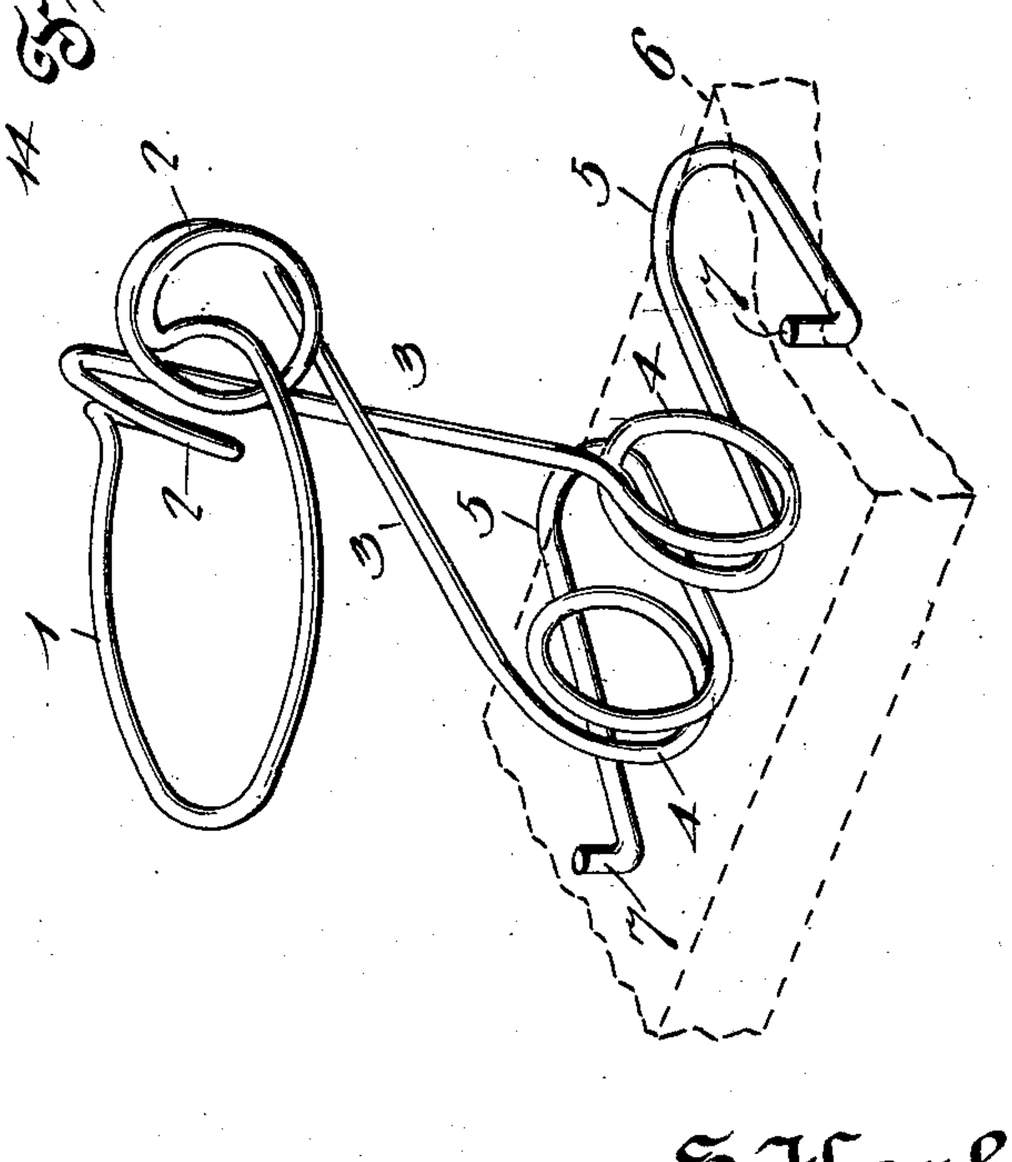

Fig. 4.

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SPRING FOR BEDS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 688,413, dated December 10, 1901.

Application filed January 5, 1901. Serial No. 42,234. (No model.)

To all whom it may concern:

Be it known that I, SAM HARBISON, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Spring for Beds or the Like, of which the following is a specification.

This invention relates to springs for beds, furniture generally, and all other devices where applicable; and the object of the present improvement is to provide a simple and effective spring having a sensitive resilient construction and disposition of its parts, which will not become crushed down by continued service, and of a strong and durable nature, and also to so prepare the same that they may be directly attached to bed or other slats or strips and removable with the latter in series and as readily replaceable in the same manner.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a spring embodying the features of the invention and shown applied to a holding device. Fig. 2 is a similar view of a modified form of the spring, also shown applied to a holding device. Fig. 3 is a sectional view of the head portion of one of the springs, showing a cap or button attachment therefor.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a horizontally-disposed head, which in the present instance is of circular form and which emanates from inwardly-inclined vertically-disposed coils 2 on opposite sides of a diametrical line drawn through the head, the said coils being below the plane of the latter, so as to avoid the formation of upwardly-extending wearing projections and permit the head to present a substantially flat support. Extending forwardly under the plane of the head at an inclination and crossing the planes of each other are two stems 3, which continue from the lower portions of the coils 2 and merge into lower vertically-arranged substantially parallel coils 4, the stems running into the outer portions of the coils 4 (shown by Fig. 1) and into the inner portions of the coils 4 (shown by Fig. 2.)

The parts thus far set forth in both forms of springs are precisely similar in construction, and from the coils 4 substantially U-shaped holders 5 project horizontally in both instances to fit over and clamp firmly in engagement with slats or strips 6, as shown in dotted lines, the holders shown by Fig. 1 differing from those shown by Fig. 2 and extend from the inner portions of the coils 4 in parallel relation, the lower free terminal portions of the holders in this form of the device having upwardly-directed studs 7, that fit into suitable openings in the slat or strip 6. The holders shown by Figs. 2 project horizontally from the outer portions of the coils 4 and converge toward vertical members 8, that are loosely tied by a band or other link 9 engaging the same, the holders in this instance from the lower portions of the said members 8 being struck down to form bends 10 and then extend forward divergently in a horizontal plane to frictionally bear against the under side of the slat or strip. The upper members of both forms of holders bear on the top surfaces of the slats or strips to which they are applied, and the coils 4 are also similarly braced and reinforced in their operation. Consequently a pressure exerted on the head 1 of either of the forms will be yieldingly received, in view of the coils 2, from which said head and the stems 3 will be depressed and ride over each other, the coils 2 and 4 contracting during the depression of the stems, so that when the pressure on the head is relieved therefrom the parts will quickly and reliably resume their normal positions. It will be seen that the strain will be taken up and absorbed by the coils 2 and 4 and that no transverse force will be brought to bear on the stems, which are shielded by the head above receiving all the weight-pressure.

It is proposed to construct the springs set forth of resilient wire of suitable gage having considerable tensile strength, and by crossing the stems, as stated, the pressure strain received through the head 1 in either instance will be diverted and transmitted to the coils 4 in lateral directions with obvious advantages, the inclination of the coils 2 accommo-

dating the angular direction and crossed arrangement of the stems. These springs will be arranged at regular intervals along the length of the slat or strip and removable from a bed, furniture generally, or any cushion device in which the springs are used simultaneously with the removal of the slats or strips and similarly replaced in operative position. It is obvious that after the slats or strips are disposed in position the springs may be tied in series, as well understood in the art, though this mode of connection will not be necessary to obtain a successful operation of the same, and, in fact, it is preferred that they remain isolated, as shown.

To avoid injury to mattresses, upholstery, and the like, it is intended to use a cap or button 11 in the head 1. Said cap or button has an upper flat surface 12, an overhanging flange 13, and a circumferential groove 14 to form a seat for the head, as shown by Fig. 3. This device has not been shown applied in Figs. 1 and 2 to avoid hiding the parts of the springs, and it is proposed to form the said cap or button of wood, pulp, paper, or any other material adapted for the purpose. By the use of this head-protector wear on the parts contacting therewith is avoided, and the spring is materially strengthened.

The preferred forms of spring have been shown; but it is obvious that for different uses changes in the size, proportions, and minor details may be resorted to without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is—

1. A spring having a horizontal head with stems extending downwardly under the same at an angle of inclination and crossing each other, the said stems merging into lower coils having horizontal substantially U-shaped holders projecting therefrom to removably clamp over the edge of a slat or strip.

2. A spring having a horizontal head with stems extending downwardly under the same at an angle of inclination and crossing each other, the said stems merging into lower coils having attaching members.

3. A spring having a horizontal head with inwardly-inclined coils at one side of the center and beneath the same, stems extending from said coils at an angle of inclination below the head and crossing each other and merging into lower upright coils provided with attaching members.

4. A spring having a horizontal head with inwardly-inclined coils below the plane of the same, stems continuing from said coils at a downward angle of inclination under the head and merging into vertically-disposed coils provided with attaching members, the stems being crossed.

5. The combination with a slat or strip having openings in the lower portion thereof, of a spring having a horizontally-disposed open head with stems extending downwardly under the same at an angle of inclination and crossing each other, the said stems merging into lower upright coils bearing upon the slat and having substantially U-shaped holders with lower members terminally projected upwardly to engage said openings, the said head being adapted to receive a cap.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAM HARBISON.

Witnesses:

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W. K. ANDERSON.